

IV. AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A controlled atmosphere cutting method, wherein in a cutting method of supplying gas in an atmosphere of a machining portion and performing cutting when a workpiece is cut, gas containing a ~~high~~ concentration of oxygen higher than an oxygen concentration in air is supplied as atmospheric gas to bring the machining portion into an oxidized atmosphere, so that an oxide is formed between a cutting edge of a cutting ~~tool~~ tool and the workpiece and a damage and wear are reduced on the tool, wherein at least one of the cutting tool and the workpiece includes titanium or a titanium alloy.

2. (Original) The controlled atmosphere cutting method using oxygen enrichment according to claim 1, wherein the atmospheric gas is oxygen enriched air in which oxygen in air is condensed.

3. (Original) The controlled atmosphere cutting method using oxygen enrichment according to claim 1 or 2, wherein the atmospheric gas has an oxygen concentration up to 40%, exceeding an oxygen concentration of air.

4. (Currently Amended) The controlled atmosphere cutting method using oxygen enrichment according to claim 1 or 2, wherein the atmospheric gas is supplied to the machining portion by one or two or more of the external supply system for blowing gas from an outside of a cutting device by using a nozzle, a peripheral supply system for supplying gas along an outer periphery of the cutting ~~tool~~ tool, and the internal supply system for blowing and supplying gas via a hole formed in the cutting tool.

5. (Withdrawn; Currently Amended) A cutting tool, in which a gas supply hole ~~4b~~ connected to a supply side of atmospheric gas is formed in a ~~tool~~ tool and an exhaust hole ~~4c~~ of a gas supply hole ~~4b~~ is opened on a tip of a body of the ~~tool~~ tool

tool, wherein the exhaust hole 4e is opened in a direction of blowing atmospheric gas to a cutting edge 4a on a cutting blade of the ~~tool~~ tool.

6. (Withdrawn; Currently Amended) The cutting tool according to claim 5, wherein the ~~tool~~ tool is an end mill, the gas supply hole 4b is formed in an axial direction in the end mill, and the gas supply hole 4b is divided at the tip of the tool so that the exhaust hole 4e is opened to the cutting edge 4a of each cutting blade.